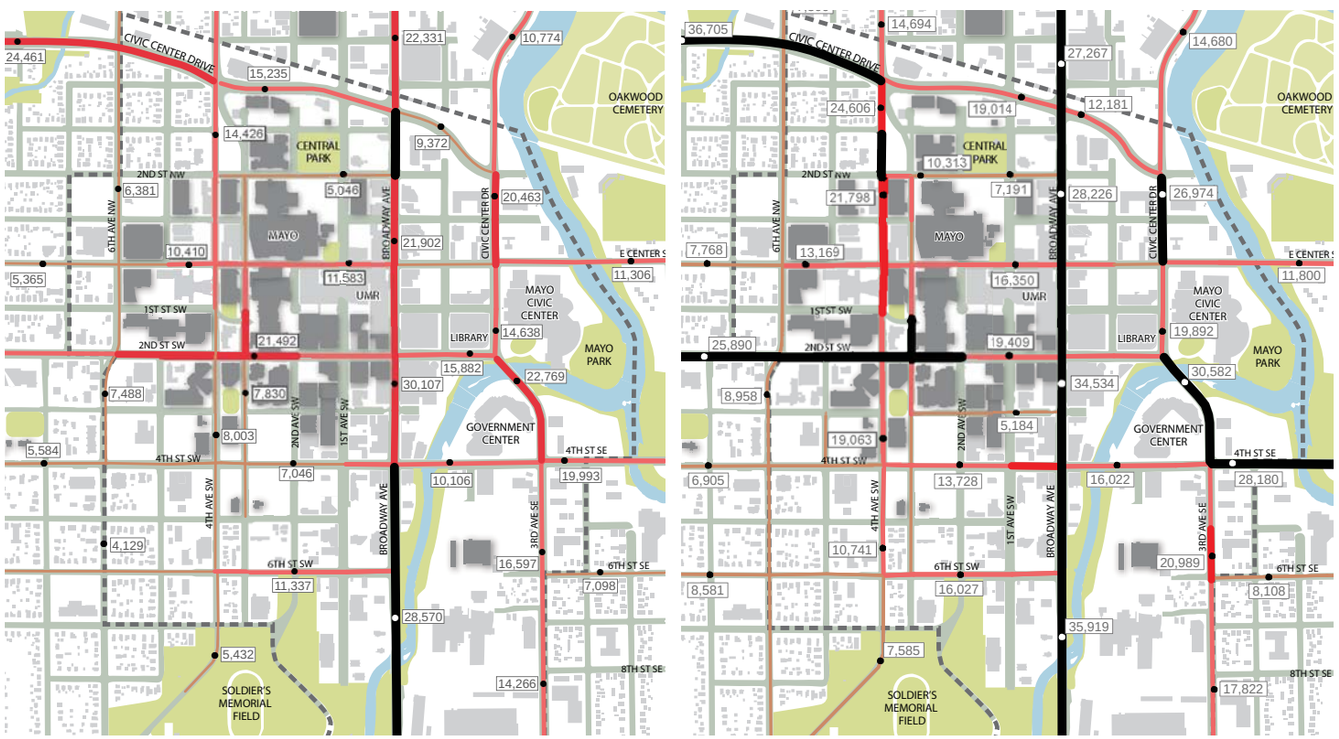
mobility

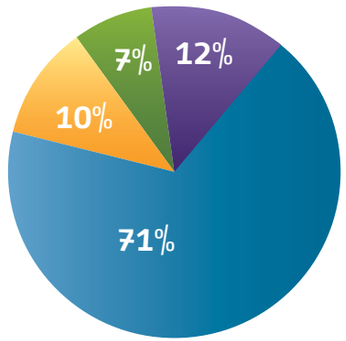
Mode Split for Downtown Commuters

Access to downtown Rochester is provided by a few primary arterial streets that make connection to regional highways, providing drivers and regional transit passengers access to downtown. Since these "portals" are limited and are unlikely to be expanded, downtown access improvements must focus on moving more people in high-occupancy vehicles, on transit, on foot, and on bicycle. The two graphics illustrates the volume of traffic on key arterials in 2006 and projected volumes in 2040. Achievement of Plan mode share goals will reduce congestion at key downtown portals and ensure Rochester maintains a vital, safe and attractive city center.

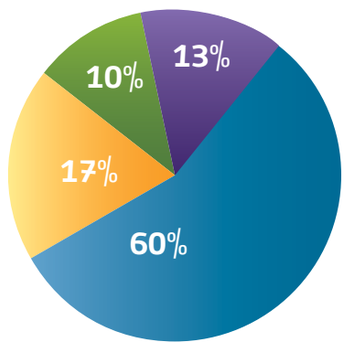


GIVEN PROJECTED GROWTH, ROCHESTER WILL NEED TO REDUCE SINGLE OCCUPANCY VEHICLE TRAVEL BY COMMUTERS BY 10% PER DECADE TO MAINTAIN EFFICIENT ACCESS TO DOWNTOWN FOR ALL USERS

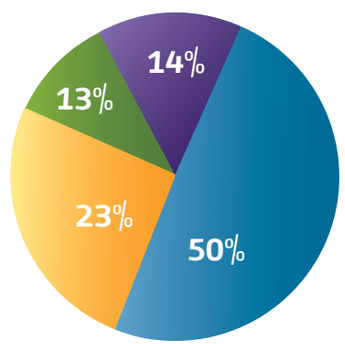
2008 Actual



2020 Goal



2030 Goal



DRIVE ALONE
TRANSIT
WALK/BIKE
CARPOOL

Mobility

In the contemporary city, the fundamental elements of transportation are evolving and being reconsidered. Transportation systems that balance an increasing number of mobility options— from street car to pedestrians and bikes to single occupancy vehicles—have replaced priorities that privilege one mode at another's expense.

Downtown Access and Mode Split

Today, approximately 71% of commute travel to downtown Rochester is by single-occupant automobile. Travel by other modes will need to increase in future years to accommodate planned growth in downtown, enhance the quality of the downtown environment, and limit impacts on the natural environment. The RDMP proposes an aggressive, but attainable shift in downtown commute travel by 10% each decade, bringing the commute mode split to 50% single-occupant trips by 2030. The Plan also encourages street design and land use changes that will facilitate non-commute trips be made on foot, transit or by bike. The plan goal is that no more than 70% of non-commute trips be made by single occupant modes by 2030.

If these goals are met, the land use assumptions in the Master Plan will still produce an estimated additional 59,000 to 62,000 new daily vehicle trips.

ESTIMATED NET NEW TRIPS GENERATED BY DOWNTOWN MASTER PLAN LAND USE PROGRAM

	2030 LOW	2030 HIGH
ESTIMATED TOTAL NET NEW TRIPS FROM DMP LAND USE PROGRAM	118,000	124,000
ESTIMATED NET NEW VEHICLE TRIPS AT MODE SPLIT GOALS	59,000	62,000
ESTIMATED NET NEW TRANSIT TRIPS	27,000	28,000
ESTIMATE NET NEW WALK & BIKE TRIPS	15,000	16,000

Sources: ITE Trip Generation Manual 7th Edition; PUMA RDMP Development Program Memo; Mayo Clinic 20-Year Land Use program estimates from Ellerbe Beckett.
Note: Trip generation analysis was conducted using ITE Trip Generation Rates as a baseline and adjusted using the ULI Shared Parking Model with inputs from Nelson\Nygaard based on peer downtown trip generation comparables.
Note: Both low and high estimates include the same Mayo Clinic development projection.

50% of Commute Trips By Alternative Mode (2030)

In 2008, 71% of all downtown bound work trips were made by single occupant vehicle commuters (drive alone). The RDMP sets an aggressive goal of reducing the drive alone mode share to 60% of all work trips in 2020 and 50% of work trips in 2030. It is important to realize that work travel makes up only a small portion of overall daily trips, but the concentration of these trips at peak travel hours has a significant impact on traffic operations. Peer communities that have made significant strides in reducing drive alone mode split, such as Boulder, Iowa City and Ann Arbor, have found that transit, bike and pedestrian investments are most effective. Often as transit services improve, carpool mode share declines or stabilizes. Still, we believe carpool will remain an important commute mode in Rochester due to the length of commutes and dispersion of commuters in small communities.

Mode split data should be tracked annually or biannually as a key measure of Plan performance. The U.S. Census and American Community Survey could be used as a tracking source, although implementing a local survey would be far more effective. Requiring employers with over 10 employees to conduct a travel survey would provide rich data that would allow the City, the Mayo Clinic and possibly a future Transportation Management Association to track performance and target new trip reduction opportunities.

The relatively large percentage of work trips to downtown generated by the Mayo Clinic positions Rochester for success; actions taken by the Mayo Clinic to subsidize transit, limit parking supply (or price parking), or otherwise incent non-motorized travel have the potential to change mode split appreciably and relatively rapidly. Anecdotal data suggests Mayo Clinic transportation program investments may have already improved mode share since 2008.

30% of Non-Commute Trips By Alternative Mode (2030)

In most U.S. cities, almost all growth in auto trips is attributed to non-work travel, including shopping, school drop offs, recreation and general errand trips. These are trips that are difficult to serve well with transit because they are often last minute, short and highly time sensitive. The most effective means of reducing these trips is through efficient land use practices that locate basic amenities in proximity to dense housing and on walkable and bikeable streets. Significant research conducted on the topic shows that mixed use, urban development can reduce trip generation by between 30% and 40% compared to traditional development patterns.

While it is very difficult to accurately measure mode share for these trip types, it is likely that well over 90% of all downtown bound non-work trips (excluding intra-downtown trips) are made by private vehicle. Based on experience in other communities, we believe that the implementation the Master Plan land use scenario, which includes mixed residential and retail development, could reduce downtown generated non-work auto trips to 70% of total daily trips.

Monitoring non-work trips on a local basis would be challenging. The City's time and money would be better spent on programs designed to encourage walkable retail and service business location in downtown and downtown adjacent neighborhoods.

Parking and Transportation Demand Management

Rochester has a very high rate of downtown employment and visitation for a city of its size. This translates to a high demand for parking and has resulted in complex and dynamic public and private parking systems. The City system is well managed and the City has undertaken several recent studies to guide the development of future capitol investments, information and marketing and rate structure development. This Master Plan supports many current recommendations and recommends additional actions to improve downtown access, while ensuring that auto access and circulation do not overwhelm the downtown environment.

Accommodating access needs for the Master Plan development scenario at the current mode split would require the equivalent of 7 to 8 full downtown block of structured parking. Clearly more people will need to access downtown on transit, foot, bike and high occupancy vehicles in the future.

ATTENTION TO EXTERIOR DESIGN LIMITS THE IMPACT OF THIS LARGE PARKING STRUCTURE IN DOWNTOWN ROCHESTER, BUT THE LACK OF GROUND FLOOR SPACE CREATES A DEAD, UNINTERESTING VIEW FOR PEDESTRIANS

City Role

There are a number of steps the City of Rochester can take to improve access to downtown through parking management and pricing. Perhaps most importantly, the City should look to its parking program as a means for developing a robust program to reduce employee travel and optimize vehicular access for visitors and customers coming downtown for shopping, dining or entertainment.

On-Street Parking

- Implement demand based pricing for most valuable on street parking (on blocks where parking is consistently over 85% occupied). This will ensure that at least one parking stall is available on each block face at any time and reduce traffic generated by people circling to find parking. Proposed rate increases in the Walker Parking report should be implemented incrementally and occupancy tracked until the 85% target is met. High value on-street stalls should be priced higher than off-street supply
- Eliminate time restrictions after demand based pricing is implemented and pricing calibrated
- Install multispace parking meters to increase revenue and provide users convient options for payment (credit/debit) and renewal (cell phones/PDAs). Implement incrementally starting on the most heavily used block faces in the downtown core and where angle parking allows more stalls to be covered by a single meter
- Implement angle-in parking to increase on-street supply of customer parking

SOLAR POWERED MULTISPACE PARKING METER ALLOWS FOR MORE FLEXIBLE MANAGEMENT AND CREDIT/DEBIT CARD PAYMENT

MARKETING GRAPHIC SHOWS THE BENEFIT OF ELIMINATING TIME LIMITS IN RETAIL AND ENTERTAINMENT DISTRICTS

ANGLE-IN PARKING ON A NEWLY RENOVATED STREET IN DOWNTOWN DAVENPORT, IA

Off-Street Parking

- Use next major parking facility investment (as programed in the Parking Enterprise Fund capital projects list) as a catalyst to attract a significant development project, with priority for opportunities identified in this Master Plan
- Expand parking capacity with the redevelopment of the 2nd Street garage by relocating primary access to 3rd Street and integrating parking into development both north and south of 3rd Street. Remove or limit width of ramp entrance on 2nd Street to create a new retail frontage and reduce traffic and pedestrian conflicts in this busy corridor
- Manage monthly parking rates according to market demand, using an 85% occupancy target. The Walker Parking report commissioned by the City in 2008, sets a logical incremental pricing scheme that could be tied to occupancy rather than a set timeframe. Recent rate increases have had little impact on demand, suggesting that current rates are set below market
- Revise parking codes for other non-CBD/CDC zones in Downtown Master Plan study area to eliminate minimum requirements for commercial and residential development. This should include the CDC Fringe zone, portions of the General Commercial and Mixed Commercial-Industrial zones (located east of the Zumbro River and north of 9th Street) S and CDC Residential zone areas. Consider adding maximum parking requirements for CBD/CDC Zones to limit total area dedicated to downtown parking
- Create design standards for large surface parking lots in CBD and CDC zones that include minimum widths buffer landscaping, tree coverage, pavement materials, maximum stall dimensions, minimum allotment of compact vehicle stalls, and low-impact drainage practices

WELL SIGNED PUBLIC PARKING GARAGE IN BOULDER, CO

GROUND FLOOR RETAIL IN THIS PARKING STRUCTURE ACTIVATES THE STREET; AWNINGS PROVIDE WEATHER COVER

- Provide developers incentives to unbundle parking from residential units and commercial development
- Develop shared parking policies and work with developers to increase use of public parking at off peak times and reduce need for single use parking development
- Develop and implement a bicycle parking plan including requirements for new development
- Implement a more aggressive parking signage and marketing program, with highly visible and consistent signage. The 3rd Street garage sign is a good model
- Partner with the Mayo Clinic to develop remote parking facilities on high-frequency bus lines

BICYCLE PARKING SHOULD BE RESOLVED FOR NEW DEVELOPMENT AND AND EXPANDED IN THE PUBLIC RIGHTS-OF-WAY

Seattle Children's Hospital—My Commute

Seattle Children's Hospital is the leading children's hospital in the northwestern United States and a national leader in innovative employee commute programming. Today, fewer than 38 percent of day-shift staff employees drove alone to work. To achieve this impressive mode split Seattle Children's offers a variety of transportation tools to serve diverse transportation needs. These tools include a fully subsidized regional transit pass, on-site carshare vehicles, carpool and vanpool formation, priority HOV parking, Guaranteed Ride Home, bicycle parking and shower/locker facilities, parking charges and commute bonus incentives for alternative commuters.

Seattle Children's MyCommute program provides each employee a personalized intranet page where they can track their commute behavior and receive instant feedback about their project month end parking cost or cash-out benefit. As part of the MyCommute implementation all employee parking was priced at $5 per day, where previously some employees paid for parking and many physicians and tenured employees did not. Additionally, an equitable commute bonus is credited for each day the employee does not drive. At month's end fees and benefits are tallied and either credited or debited from the employees paycheck.

MyCommute provides a monthly calendar that can be completed each month by the employee, but is adjusted automatically based on actual use. Each employees ID badge serves as their parking and shuttle smart card. Each garage entry is tracked as are shuttle boardings at remote parking lots. Parking charges are assessed automatically. Carpoolers have the option to swipe multiple cars, which provides them with a commute bonus credit.

MyCommute offers a "dashboard" allowing employees to track the impacts of their commute activities. This conscious-raising feature has been a hit with employees and helps the hospital to further its goals of bettering human health and reducing environmental impacts.

MyCommute dashboard tracks employee vehicle miles traveled (VMT), number of auto trips reduced, personal cost savings from reduced vehicle operations, CO_2 reduction and gas saved.

Demand Management

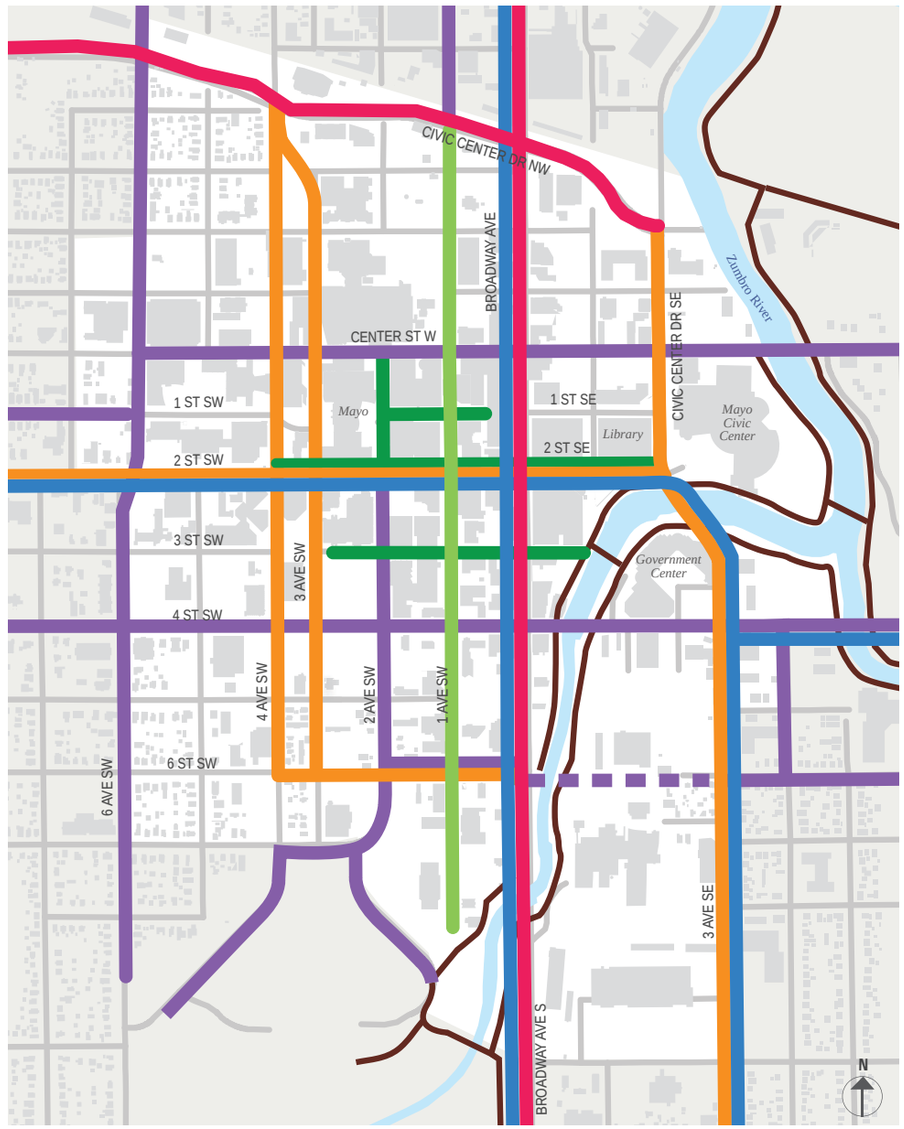
- Work with key downtown partners to develop a Downtown Transportation Management Association (TMA). A TMA is a business backed organization designed to help develop commute options and provide a clearinghouse for transit pass sales and alternative commute information)
- Require new residential developments to provide a transit pass to each resident for two years
- Consider using a portion of future parking revenue to subsidize a downtown employee transit pass program
- Develop a City bicycle program with dedicated staff and funding

Mayo Clinic and Large Downtown Employers

The Mayo Clinic owns and operates nine parking ramps in the downtown area as well as 28 surface parking lots. Despite operating a substantial supply of parking, Mayo Clinic has an eight year waiting list for employee parking in the downtown. Planned 20-year Mayo Clinic facility development will consume most downtown land currently used as surface parking. These supply reductions combined with growth in employment and patient visits will result in substantial new parking and overall access demand. Other large employers that do not charge the full cost of parking to its employers have similar impacts. The following parking and demand management programs or actions should be encouraged for all downtown employers with more than fifty employees

Employee Parking

- Commit to limiting downtown parking development to no more than 1 stall per two employees (or a rate that allows Mayo Clinic to meet goal of 50% non-drive alone commute mode share in 2030)
- Partner with City of Rochester to implement remote parking facilities served by public transit and/or Mayo Shuttle services
- Continue to pursue shared parking opportunities with adjacent uses and City of Rochester



RECOMMENDED STREET CLASSIFICATIONS IN DOWNTOWN ROCHESTER

Demand Management

- Continue to provide current transit benefits for all current and new employees
- Implement parking cash out program that provides commute refund for employees who do not use their parking benefit. This would help to reduce the parking wait list and provide a financial bonus for employees who chose alternative travel modes
- Develop a personalized commute program that allows employees to track the cost, health and environmental benefits of their commute

Downtown Streets Purpose & Character

To accommodate planned growth in travel, Rochester will need to make more efficient use of current street space. In short, this means carrying more people in high-occupancy vehicles, such as transit and shuttles, and encouraging travel by foot and bicycle where possible. Like most cities, Rochester has largely designed and managed streets for private vehicle circulation and access to parking. Proposed Master Plan street types (which are not intended to replace the City's functional classifications) set priorities for movement of people, not just vehicles, and ensures that transit, cyclists and pedestrians all are provided safe and convenient access to and circulation through downtown.

Master Plan street types are shown in the figure to the left and include

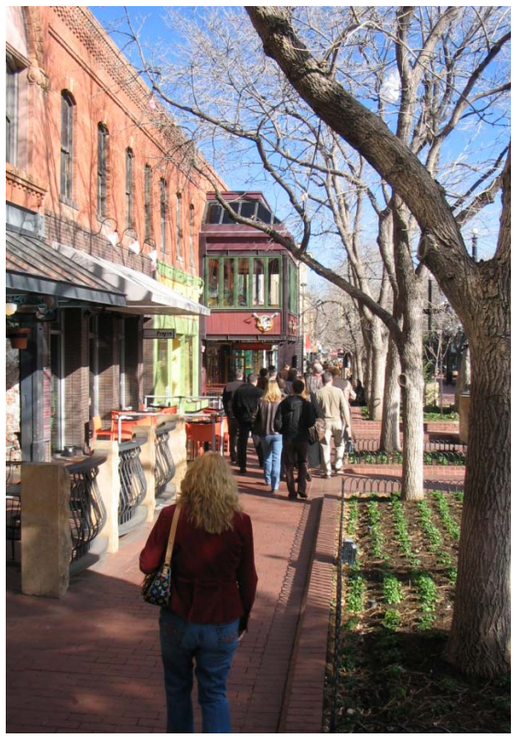
- **Primary Traffic Street**—primary function is to efficiently move motor vehicles into and out of downtown
- **Secondary Traffic Street**—serves an important function for motor vehicles accessing downtown destinations and parking facilities, but auto movement is necessarily balanced with other priorities
- **Main Street/Pedestrian Street**—primary street function is to provide access to retail businesses, short term storage for vehicles and highest quality pedestrian environment
- **Complete Street/Bicycle Street**—serve as key bicycle corridors and high quality pedestrian thoroughfares, while maintaining slow-speed auto circulation function
- **Transit Mobility Street**—provision of fast and reliable transit movement is a key street function, balanced with a high quality pedestrian environment allowing safe and comfortable access to transit stops

Complete Streets

The City of Rochester adopted a Complete Street Policy in 2009, ensuring that greater emphasis will be placed on ensuring safe, convenient, comfortable and accessible streets for all users, ages and abilities. Providing complete streets will improve accessibility for a variety of users to downtown destinations and enhance the quality of downtown's public realm.

ROCHESTER'S COMPLETE STREETS POLICY, ADOPTED IN 2009, PROVIDES A SOLID FRAMEWORK FOR DESIGNING DOWNTOWN STREETS TO ACCOMMODATE ALL USERS. A COMPLETE STREET SHOULD BE DESIGNED FOR ALL USERS, SUCH AS 3RD STREET SW BETWEEN 1ST AVENUE SW AND BROADWAY

Main Streets/Pedestrian Streets

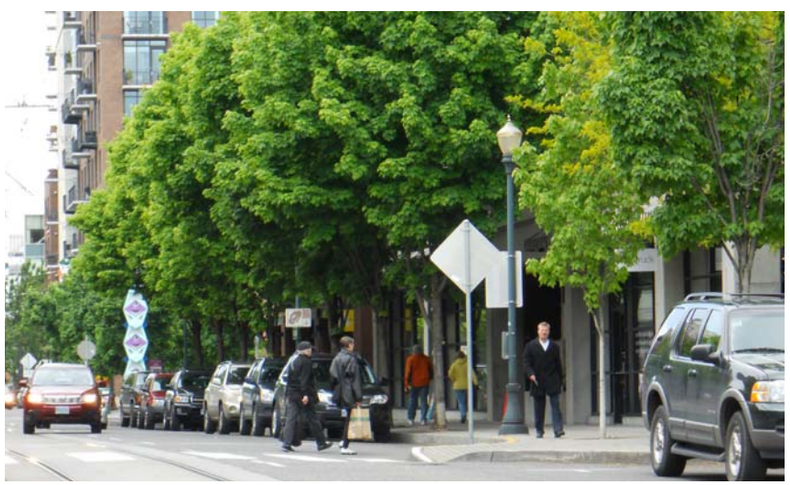


BUFFERED SIDEWALK IN BOULDER, CO

WASHINGTON AVENUE IN ST. LOUIS, MO IS A TRAFFIC CALMED STREET OFFERING STREET TREES, TEXTURED PAVEMENT AND VARIOUS FORMS OF LIGHTING

TRAFFIC CALMING PROJECT IN ST. LOUIS USING A LANE REDUCTION PLANTERS THAT ACT AS CURB EXTENSIONS

SIDE WALK CAFÉ IN HOLLAND, MI



MID-BLOCK CROSSINGS AND STREET TREES IMPROVE THE PEDESTRIAN EXPERIENCE

CURB EXTENSIONS DECREASE CROSSING DISTANCES FOR PEDESTRIANS AND SLOW VEHICLE TRAFFIC

Complete Streets/Bicycle Streets

BICYCLE SHARROWS WITHIN GREEN BIKE LANE, LONG BEACH, CA

BICYCLE PARKING AND SIGNAGE IN THE 3RD STREET RAMP, DOWNTOWN ROCHESTER

ROCHESTER HAS AN EXCELLENT MULTIUSE PATH SYSTEM TO BRING BICYCLISTS TO THE EDGE OF DOWNTOWN

BICYCLE SPECIFIC WAYFINDING SIGNAGE PROVIDES SAFE AND EASY CONNECTIONS TO DESTINATIONS

Transit Priority Streets

HIGH-QUALITY STOP FOR BUSES AND STREETCAR IN PORTLAND, OR

FUTURE PEDESTRIAN AND TRANSIT IMPROVEMENTS ALONG SW 2ND STREET IN DOWNTOWN ROCHESTER

HIGH QUALITY BUS STOP ON A MAJOR BUS CORRIDOR IN VANCOUVER, BC

FUTURE BUS SHELTER ALONG SW 2ND STREET IN DOWNTOWN ROCHESTER

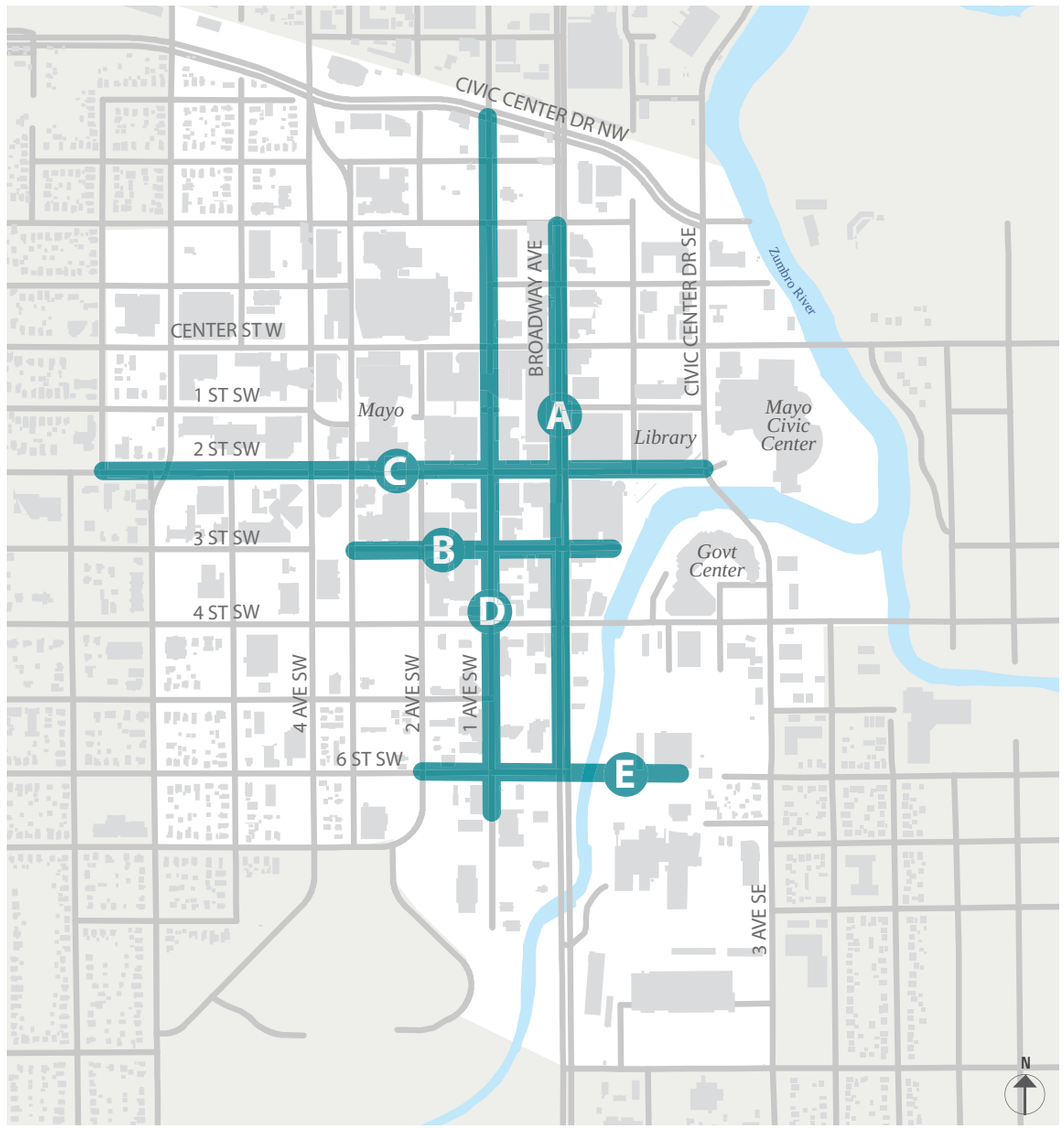
Pedestrian Environment

Street Level

Creating a comfortable, safe and enticing pedestrian environment throughout downtown Rochester is a primary mobility goal of the Master Plan. This plan respects the value of the skyway and subway pedestrian network, and includes recommendations for completing key segments of the skyway system. However, recommendations stress the development of the street level pedestrian environment as a priority. This is necessary to attain several important Plan objectives:

- Enhance business vitality at the street level
- Create a sense of safety and security for all people at all times of day
- Calm traffic and create streets that are inviting for pedestrians and bicyclists

The figure to the right shows the corridors where street-level pedestrian improvements are top Plan priorities. Specific improvement areas are discussed on the following pages.



RECOMMENDED STREET-LEVEL PEDESTRIAN IMPROVEMENTS

THE CROSSING OF BROADWAY AT 1ST STREET S OFFERS A PEDESTRIAN ACTIVATED SIGNAL AND A MEDIAN REFUGE TO REDUCE CROSSING DISTANCE AND EXPOSURE

A. Broadway Pedestrian Improvements

Relatively high volumes of traffic, signal progressions designed to move traffic rapidly through downtown, and a lack of any pedestrian buffer zone makes Broadway an uncomfortable street to walk along and to cross. The crossings between Center Street and 4th Street S are the most critical and should be addressed in the short-term. The crossing at Broadway and 1st Street S is already complete and should serve as a good example for other crossing treatments. Key improvements at intersections include:

- Sidewalk bulb-outs to narrow pedestrian crossing distance
- More clearly defined crosswalks at all intersections (in our opinion zebra stripes offer optimal driver recognition)
- Right turn on red restrictions for northbound and southbound traffic where Broadway intersects with Civic Center Drive, Center Street, 1st Street S, and 3rd Street S (this could be extended over time)
- Use of leading pedestrian intervals (LPI) for signals at Broadway and 2nd Street and Broadway and 4th Street. An LPI re-times the signal phasing so that the pedestrian phase begins a few seconds before the vehicular phase
- New traffic signal at 3rd Street S with pedestrian signal, bulb-outs and clearly defined crosswalks and signage

B. 3rd Street Shared Street

3rd Street South between the Zumbro River and 3rd Avenue Southwest should be redesigned as a shared street, with a design oriented toward providing a top-quality, street level pedestrian connection between the Mayo Clinic, 1st Avenue retail, the riverfront and the Government Center. The short segment of 3rd Street east of Broadway could adopt a true shared street design that includes a broad pedestrian plaza along the river and generous sidewalks connections to the 1st Avenue "Main Street" corridor. Recommendations detailed later in the report suggest limiting autos to eastbound ingress to parking facilities (egress could be on 2nd and 4th) and possibly even grade separating the parking ramp entrances. Furthermore, this low-volume traffic street provides an opportunity to introduce a 2-way separated bicycle facility (a cycle track) connecting the Zumbro River trails and downtown (including the 2nd Ave bicycle corridor).

C. 2nd Street South

2nd Street is the most important transportation corridor in downtown Rochester. It is an important traffic carrying street, the primary transit corridor, and also a critical pedestrian street connecting key downtown uses and concentrations of public parking. The 2nd Street Construction Project is setting a standard for pedestrian safety and comfort along this corridor and should be continued to other parts of the corridor, particularly the segment between Broadway and Civic Center Drive. Recommended improvements include:

- Pedestrian bulb-outs at Broadway, 1st Avenue, 2nd Avenue and 3rd Avenue (some of this work is already planned as part of the 2nd Street Construction Project at 2nd and 3rd Avenue SW)
- Reduction of right turn radius at SW corner of 2nd Street SE and Civic Center Drive and construction of bulb-out to reduce north-south crossing distance
- Right turn on red restriction at Civic Center Drive.
- Closure of the entranceway to the Mayo Civic Center (this is planned as part of proposed expansion, but should be considered independent of expansion project)
- Clearly defined crosswalks and signage at all intersections

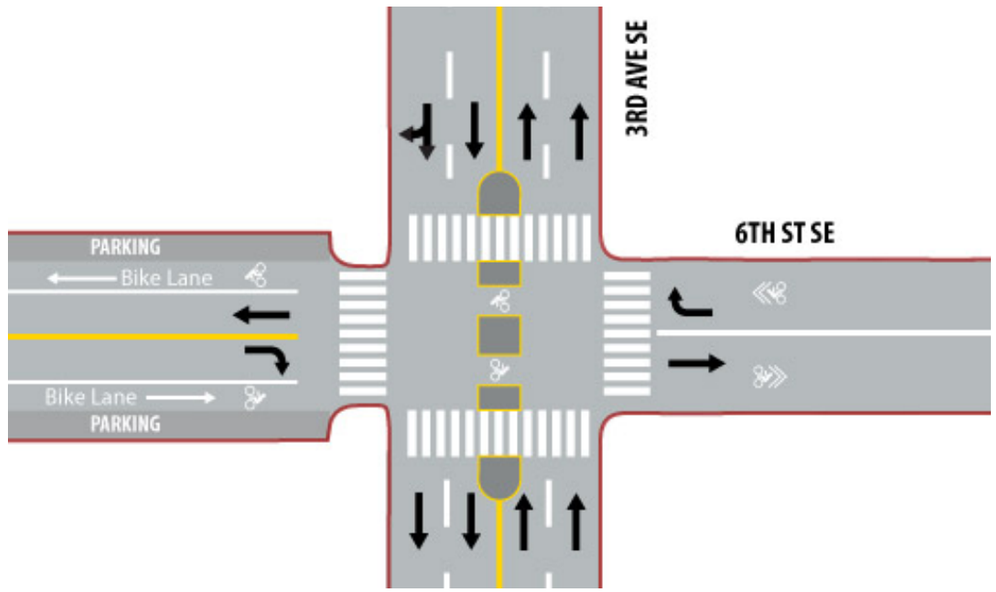
D. 1st Avenue Main Street

The Master Plan recommends 1st Avenue be developed with "Main Street" character and uses, with the priority emphasis on the pedestrian and street level activity. The section of 1st Avenue SW between Center Street and 6th Street SW should serve as a model for the rest of the corridor. Improvements along this street include:

- Bulb-outs at 2nd Street NW, Center Street, 4th Street SW and 6th Street SW
- Clearly defined crosswalks and signage at all intersections
- Elimination of driveways and curb-cuts as feasible over time
- High quality pedestrian amenities, including street trees, public seating, and landscaped buffers
- On-street parking to provide business access and a pedestrian buffer

E. 6th Street

This street that connects Historic Southwest and Pill Hill to downtown should encourage slow speeds and discourage through-traffic. Both bicycle and pedestrian safety and comfort are important on this street. As the UMR campus develops, the emphasis on high quality pedestrian amenities should be encouraged, especially between Broadway and 2nd Avenue SW. A new 6th Street SE bridge is recommended between Broadway and 3rd Avenue SE. This bridge would allow for continuous movement of bicycles and pedestrians, but require diversion of vehicles at 3rd Avenue SE to prevent through traffic from entering the neighborhood east of 3rd Avenue East. A new median would allow bike and pedestrian through movements but restrict eastbound and westbound through vehicle movements. The intersection at 6th Street and 3rd Ave could be designed to prohibit through vehicle traffic (allowing through bike traffic) in the east-west directions.



MEDIAN ALLOWING THROUGH BICYCLE TRAFFIC RECOMMENDED FOR 3RD AVENUE AT 6TH STREET SOUTH

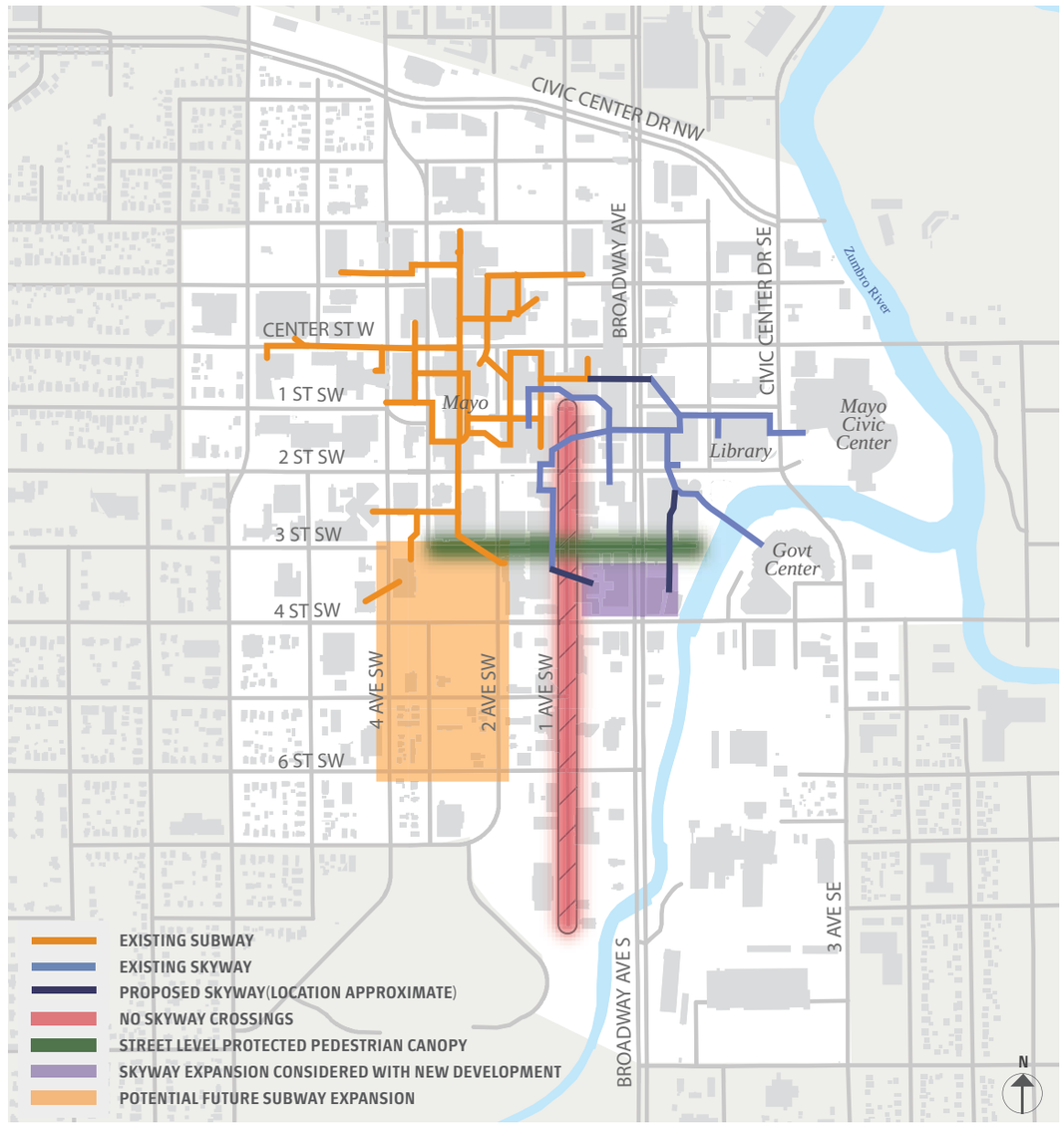
Subways/Skyways

The subway and skyway network provides two additional levels of circulation in the downtown that are climate-controlled. Although the skyway and subway networks are important to the vitality of the Mayo Clinic and downtown core, and a significant amount of retail activity is located here, their presence also pulls retail and activity away from the street level, which contributes to the feeling of a less active downtown. While skyways are now viewed as an important economic consideration for developers, development of the skyway network without more aggressive city regulation could block important corridor views and limit future street-level business activity and vitality. Key priority areas for expansion of the subway and skyway networks are highlighted in the figure at the right and discussed in more detail below.

Skyway

It is anticipated that skyways will continue to be added to the system as the downtown grows, but only in very limited locations. Primary strategic connections are identified to improve skyway connections and circulation in the downtown core, limiting the need to pedestrians to walk out of direction. Approval of future connections should meet the following criteria:

- No additional skyway crossings should be allowed on 1st Avenue SW or 3rd Street SW/SE (beyond those approved as of 2010). This will help retain the intimate, "Main Street" feeling of these streets and encourage street-level retail and activity
- New skyway connections must be strategically important toward closing gaps in the system and not expand outside the current CBD "loop"
- Within the priority areas, connections only be considered for uses that generate a high level of pedestrian activity such as hotels, large residential buildings, parking garages, civic and government uses and large office towers.
- Skyway connections should not be made where parallel crossings are available within two blocks and easily accessed through the system
- Skyway crossings of Broadway should be designed to ensure adequate height to allow future electric streetcar operations. Clearance of 18 feet is helpful in accommodating centenary wires at a height that allows streetcars to operate in mixed traffic

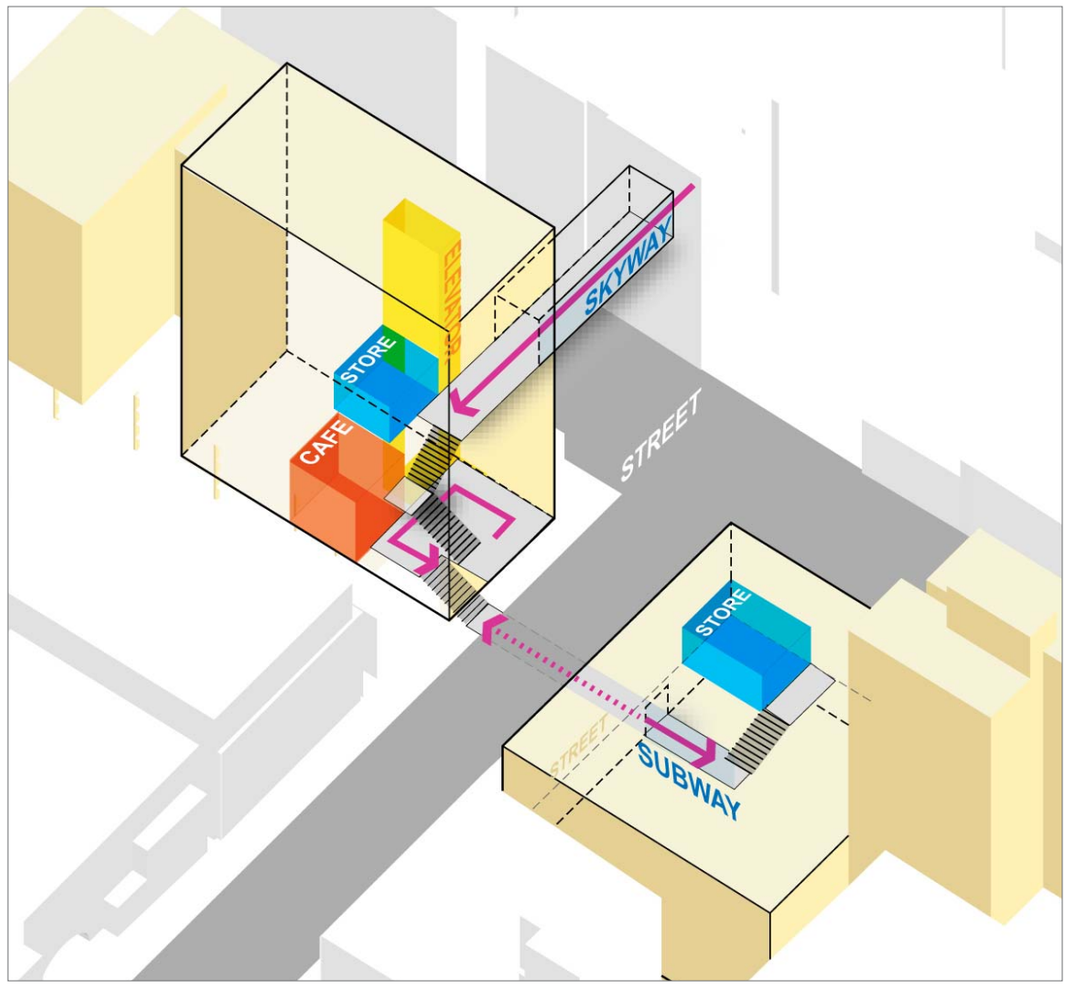


RECOMMENDED SUBWAY/SKYWAY IMPROVEMENTS

- In place of east-west skyways south of 2nd Street, consideration should be given to the development of a 3rd Street S. pedestrian corridor design program that would include a unified and continuous awning design, heated sidewalks, wayfinding and amenity program. While this would not replicate the climate controlled skywalk environment, it could help encourage street level pedestrian activity in this important corridor
- Skyway design standards should be developed and adopted to ensure future skyway connections fit in with the character of the downtown streetscape, especially as they relate to historic buildings and crossings of important pedestrian corridors

Subway

The subway system is designed to support and connect the various buildings on the Mayo Clinic campus and is largely concentrated on the western half of the downtown. Future growth of the Mayo Clinic will most likely include expansion of the subway network to support their facilities. Because the subways are largely owned and maintained by the Mayo Clinic, it is anticipated that the Mayo Master Plan will establish where subway connections are needed. Where subway connections interact with non-Mayo uses, clear signage and connectivity with the street and skyway level are recommended.



SKYWAYS PROMOTE INTERACTION AMONG DIFFERENT LEVELS OF CIRCULATION, FROM THE SKYWAY TO SUBWAY TO STREETS. FUTURE STANDARDS WILL ENSURE THE BENEFITS OF THESE POINTS OF ENGAGEMENT ARE MAXIMIZED

Transit Framework

Service

Today transit is a fundamental component of downtown access and mobility, carrying approximately 10% of trips into and out of downtown Rochester City Lines is well managed and highly productive for a city of Rochester's size. The RDMP projects significant employment and residential growth in the downtown core and will require a new approach to transit provision that allows transit to carry a greater share of total trips, while reducing its spatial and visual impact on downtown streets. As the geographic boundaries and mix of uses increase in the downtown, transit will also need to move more people making short trips within downtown, removing short and inefficient auto trips from downtown streets. Key transit recommendations that can be implemented in the next 5-10 years include:

Plan for doubling of transit trips

If downtown Rochester is to continue to grow, it will be necessary to slow the rate of growth in demand for space dedicated to automobiles, including expanded roadway and parking capacity. To meet 2030 mode split goals, it is estimated that Rochester City Lines will need to carry double the daily passengers it does today. This will require not just continuation of the existing mode share for transit—which would result in overall growth in transit usage—but growth in the percentage of downtown visitors and residents using transit for work and other trips. Specific actions:

- Conduct a comprehensive operations analysis to improve efficiency of operations and begin to phase out downtown pulse system
- Implement aggressive Transportation Demand Management (TDM) programs such as downtown wide transit pass
- Manage parking demand through price and maximums (see parking section)

THE EXISTING LOCAL BUS NETWORK IS DESIGNED TO ALLOW TRANSFERS BETWEEN ALL ROUTES, AND THUS SIGNIFICANT VOLUMES OF BUSES ARE IN THIS AREA DURING PEAK PERIODS (IDLING, PICKING UP/DROPPING OFF PASSENGERS, PARKING). DESPITE THE VALUE TRANSIT BRINGS TO THE DOWNTOWN, BUS CONGESTION ALONG 2ND STREET SW OVERWHELMS OTHER USERS OF THE STREET AT CERTAIN TIMES

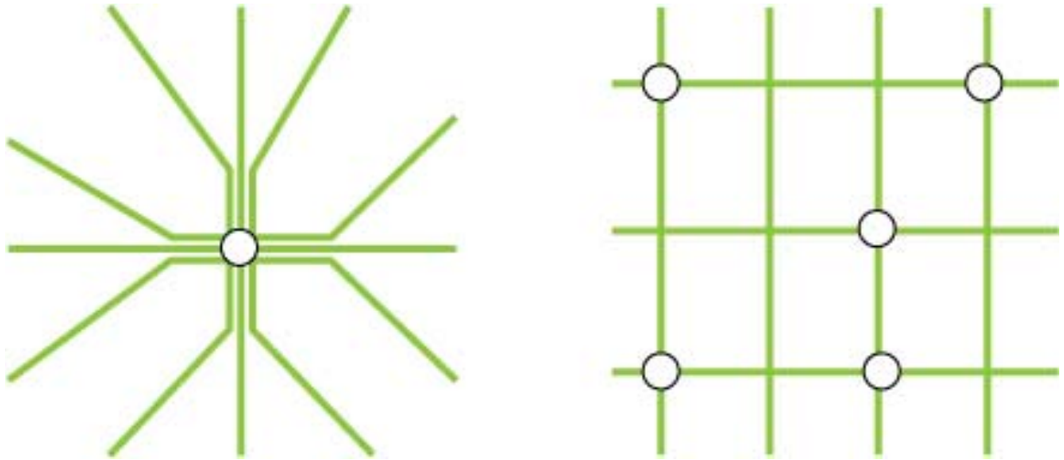
Develop 2nd Street and Broadway as Primary Transit Corridors

One way to achieve the goal of doubling the number of trips made on transit by 2030 is to focus transit service in downtown onto two primary transit corridors: 2nd Street SW and Broadway. Especially within the downtown core, transit amenities along these corridors should be of the highest quality and signage and marketing materials should make it clear that these are the main transit corridor in the city. The new transit facilities on 2nd Street should serve as a model for other transit facilities downtown. Over time, the main transfer location for the local routes on 2nd Street SW is recommended to transition closer to Broadway in order to concentrate transit activity and facilitate transfers between routes. The primary transit corridors should also be marketed in a way that people can use transit for intra-downtown circulation as well as circulation between downtown and Saint Marys Hospital. Intersection of the primary transit corridors of 2nd Street SW and Broadway create an opportunity to locate transit bays west of Broadway and north of 2nd on Broadway, creating an on-street transit hub.

Conduct a comprehensive operations analysis

The existing "hub and spoke" nature of the transit system – which is designed such that buses are arriving and departing more or less simultaneously in order to facilitate transfers – has served Rochester well but limits the ability to significantly grow the transit system. To grow the system effectively, it is recommended that the City conduct a comprehensive operations analysis that explores ways for the transit system to transition away from a "hub and spoke" network. One recommendation, which was also discussed in the 2007 Transit Development Plan, is to transition to a "grid network" whereby cross-town service is implemented and multiple transfer opportunities are available. The hub and spoke service model is typical of smaller systems that have limited resources, while a grid network design is more common among larger urban transit systems that demand higher frequency service. The grid network also complements the recommendation to implement Transit Priority Corridors and provide intra-downtown circulation on transit.

The system caters to its most captive customer base: downtown-based commuters. As the downtown population diversifies, transit will need to provide high-quality service throughout the day and in a way that is easily comprehended by the occasional user.



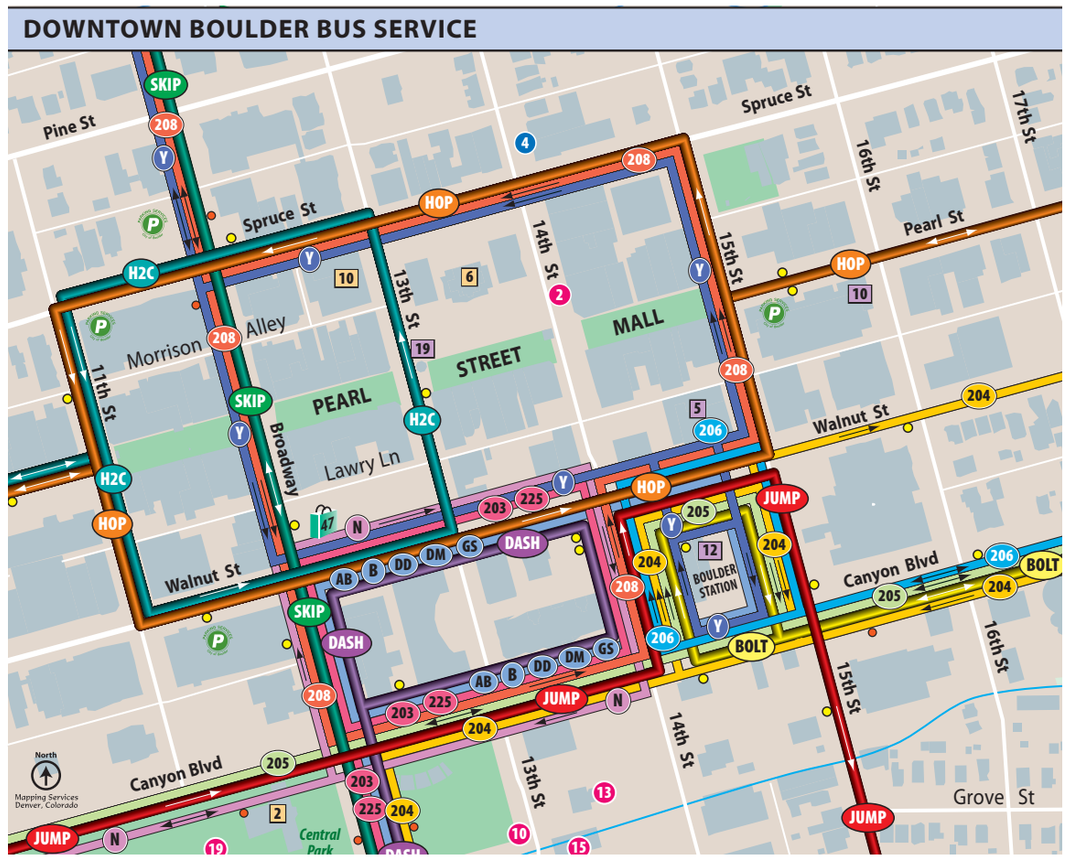
THE "HUB AND SPOKE" NETWORK ON THE LEFT ONLY ALLOWS TRANSFERS AT ONE LOCATION, WHILE THE "GRID" NETWORK ALLOWS FOR MULTIPLE TRANSFER OPPORTUNITIES AND CROSS-TOWN SERVICE

THE ECOPASS PROGRAM IN THE DENVER/BOULDER REGION ALLOWS EMPLOYERS TO PURCHASE ANNUAL BUS PASSES FOR THEIR EMPLOYEES AT A SUBSIDIZED RATE. THE CITY OF BOULDER HAS ALSO PARTNERED WITH LOCAL BUSINESSES TO OFFER DISCOUNTS TO ECOPASS HOLDERS AND ESTABLISHED A NECO PASS PROGRAM THAT OFFER HIGHLY SUBSIDIZED BUS PASSES FOR PARTICIPATING NEIGHBORHOODS

Improve Service Comprehension

The transit system is currently designed and marketed primarily to commuters, who typically use transit for one trip purpose and have little need to access system information for one-time trips. For downtown visitors or other users, the system is confusing and information inaccessible. Immediate and low cost improvements can be made by:

- Updating the system map
- Posting system maps at all major stops in downtown and throughout the system
- Create a downtown transit map that could also be promoted as the "official" downtown map, whereby information about businesses, restaurants, and other downtown activities could be included

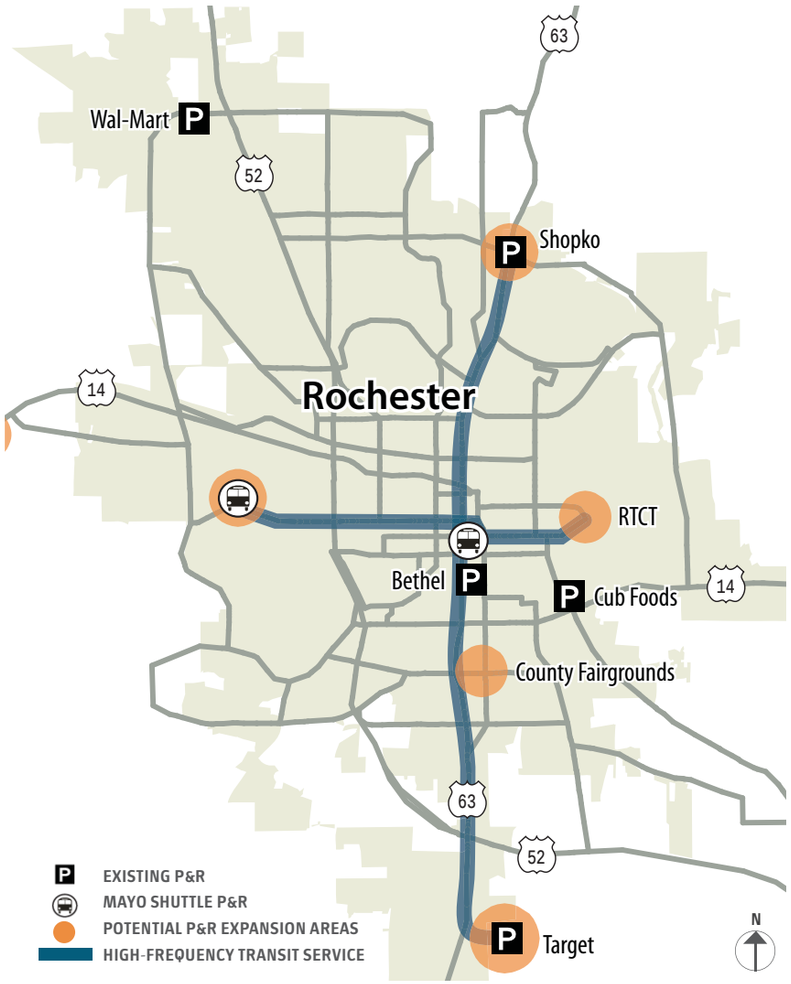


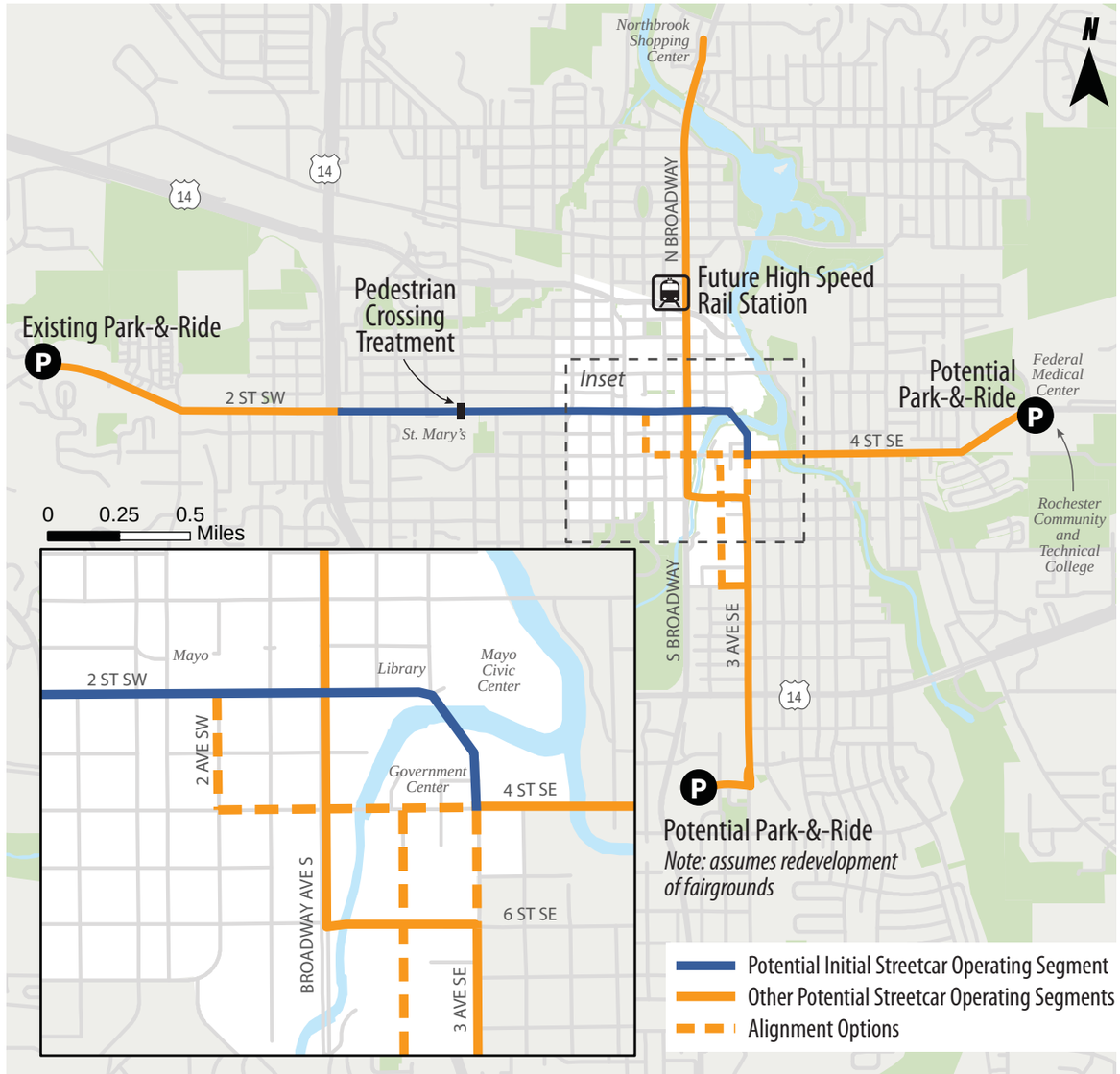
BOULDER'S CITY-WIDE TRANSIT MAP CLEARLY SHOWS THE DIFFERENT TRANSIT ROUTES THROUGHOUT THE CITY AND PROVIDES A DETAILED STREET MAP WITH MAJOR DESTINATIONS AND ACTIVITY CENTERS

Expand Remote Parking and Connect with High Frequency Transit

Through the use of park and ride lots and remote parking, transit already plays an important role in reducing the amount of parking in downtown, especially parking devoted to the long-term storage of vehicles. It is recommended that the City and Mayo Clinic build on the success of the park and ride and remote parking programs by providing clearly marketed, high-frequency transit connections from these locations to downtown via the Transit Priority Corridors (2nd Street SW, Broadway and 4th Street SE). As redevelopment occurs, parking in the downtown area, such as the Fullerton lot, is encouraged to be accommodated remotely and replaced by higher and better land uses. Several specific locations are recommended for future park and ride or remote parking locations in the figure to the right, along with locations where high-frequency transit service would be marketed for downtown circulation.

TWO REMOTE PARKING LOTS, SERVED BY HIGH-FREQUENCY SHUTTLES, ARE ALREADY SUCCESSFULLY BEING USED BY THE MAYO CLINIC TO REDUCE PARKING DEMAND IN THE DOWNTOWN CORE





POTENTIAL DOWNTOWN AREA RAIL ALIGNMENTS

Future Rail Services

Over the life of this Master Plan, mobility needs in downtown and between other city neighborhoods are likely to change dramatically—especially if the downtown grows as anticipated. Furthermore, fuel prices, potential fossil fuel scarcity and the evolution of a regional high speed rail (HSR) system could further alter the way people travel to and from Rochester. This Plan recommends that the City begin consideration of a medium capacity rail system connecting major downtown destinations, including a potential future HSR station, and near-downtown neighborhoods.

High Speed Rail, Light Rail and/or Commuter Rail

A number of regional and intercity rail proposals have been considered in the past, all of which would likely serve downtown along one of the existing rail alignments. Although the possibility of a regional or intercity rail serving Rochester remains a long-term goal, it is recommended as part of this Master Plan to assume a future rail hub in the downtown be located between Broadway and 1st Avenue NW just north of Civic Center Drive. This location would be adjacent to the north-south Transit Priority Corridor and could also serve as a northern terminus for a north-south streetcar line (see below).

Downtown Streetcar Circulator

Based on projected growth and parking needs, the Plan recommends two streetcar segments

- East-west line with an initial phase between Saint Marys Hospital and downtown with phased extensions to Olmsted Medical Center and
- North-south line between the Olmsted County Fairgrounds and the future rail terminal north of Civic Center Drive between 1st Avenue NW and Broadway

The figure on the opposite page shows potential alignments. Based on a preliminary analysis of corridor densities, it is recommended that the City begin a feasibility assessment of the east-west corridor, along with operational feasibility, to determine the potential for such an investment to act as a development catalyst.

Funding Considerations

All rail services require significant capital investments to lay the track, purchase vehicles, and fund other necessary elements such as maintenance facilities, overhead wire, marketing materials, signage, etc. Regardless of the rail investment that is pursued in Rochester, a variety of funding sources will need to be explored, including local, state and federal sources. While many of the modern streetcar lines built in the United States have relied almost exclusively on local sources (e.g., Portland and Seattle), other rail investments like light rail and commuter rail have been funded largely through state and federal sources. While competition for federal funding remains intense, a much greater emphasis is being placed on sustainable development and livable communities, which could translate to more federal funding for streetcar circulators.

HOW MIGHT A STREETCAR LINE IN THE 2ND STREET CORRIDOR IN ROCHESTER COMPARE WITH OTHER STREETCAR SYSTEMS?

	ROCHESTER	PORTLAND	SEATTLE	LITTLE ROCK	TACOMA	TAMPA
ROUTE MILES	1.5	4.0	1.2	2.5	1.6	3.0
WEEKDAY RIDERSHIP	1,600	11,914	1,300	680	2,925	1,040
DAILY RIDERSHIP / ROUTE MILE	1,066	2,979	1,083	272	1,828	347

NOTE: Weekday ridership estimates for Rochester assume a significant portion of existing Mayo shuttle passengers between downtown and Saint Marys Hospital would use streetcar.

- **A** MEDIAN TREATMENT ALLOWS THROUGH BIKE MOVEMENT, BUT AUTOS REQUIRED TO TURN RIGHT
- **B** BIKE BOX AND/OR NO RIGHT-TURN ON RED
- **C** POSSIBLE BIKE HUB/BIKE PARKING
- **D** BIKE/PEDESTRIAN SIGNAL
- **E** NEW TRAFFIC SIGNAL WITH PEDESTRIAN PHASE AND BIKE BOX

- X INTERSECTION TREATMENT
- TRAFFIC CIRCLE
- P BIKE PARKING
- BIKE LANE
- FUTURE ROAD CONNECTION WITH BIKE LANES
- BIKE SHARROW
- BIKE PATHS

RECOMMENDED INTERSECTION TREATMENTS FOR CYCLISTS

Bicycle Network

Downtown Rochester and the downtown adjacent neighborhoods have all the characteristics of a great bicycling community. Grades are relatively flat and neighborhoods are laid out in a grid pattern providing good access to places of all types and multiple options for cyclists of different comfort levels. Rochester's well-developed off-street trail system provides excellent connections from further removed neighborhoods to points on the outskirts of downtown. The biggest challenge to bicycle commuters is the last 1/2 mile ride to penetrate downtown.

Weather is certainly an impediment to growing bicycle travel in Rochester. However, the City should take notice of its northern neighbor Minneapolis, which has become one of the most bikeable cities in America and now sees up to 6% of total commuters on bicycles. The figure on the opposing highlights recommendations for improving downtown bike accessand mobility.

Bicycle Treatment

Low cost treatments using paint and completed within the existing right of way can greatly enhance bicycle mobility.

Intersection treatments

Intersection treatments are key investments made to ensure safe interactions between bicyclists and motor vehicles at potential conflict points. Colored bike lanes are a technique used to indicate the presence of cyclists through intersections. Physical and regulatory turn restrictions, such as diverters or "No Right Turn on Red" restrictions significantly improve intersection conditions for bicycles. Bicycle detection devices such as bicycle loop detectors and bicycle actuated signals, offer separate signal phases for cyclists which eliminate motor vehicle conflicts.

- **4th Street and Broadway**—bike box and no right turn on red
- **Center Street and Broadway**—bike box and no right turn on red
- **2nd Avenue SW and 2nd Street SW**—potential bike parking/bike hub
- **3rd Street SE and Broadway**—New intersection with bike lanes
- **4th Avenue SE and 4th Street SE**—Bike and pedestrian median refuge
- **6th Street and 3rd Avenue East**—Bike and pedestrian median refuge, no through east-west auto traffic
- **3rd Street and Broadway**—Possible bicycle only signal phase for two-way bicycle track

BIKE SHARROWS INDICATE TO MOTORISTS TO SHARE THE LANE WITH CYCLIST

BIKE LANE BETWEEN A TRAVEL LANE AND ON-STREET PARKING

REFUGE MEDIANS ALLOW FOR SAFER CROSSINGS AT LARGER, HIGH SPEED INTERSECTIONS. RECOMMENDED LOCATIONS FOR BICYCLE AND PEDESTRIAN REFUGE MEDIANS ARE SYMBOLIZED AS D AND E ON THE MAP ON PAGE 110

TRAFFIC CIRCLES, OR MINI-ROUNDABOUTS, ARE TRAFFIC CALMING DEVICES THAT SLOW VEHICLES AND PROVIDE AN ATTRACTIVE ELEMENT TO THE NEIGHBORHOOD. PROPOSED TRAFFIC CIRCLES ARE SHOWN IN ON THE MAP ON PAGE 110

Bike Routes with Sharrows

Sharrows are shared lane pavement markings that visually indicate to motorists that cyclists might be using the travel lane, while guiding cyclists where to ride in the lane. This inexpensive design intervention can increase bicycle connections, improve safety, and develop greater visibility for bicycling in the downtown area. Bike sharrows are generally more appropriate where travel lanes are wider than a single travel lane, usually 12-14 feet. It is recommended that priority investments for sharrow installation will be located in the following locations:

- Center Street W east of 6th Avenue and across the Zumbro River
- George Gibbs Drive SW and 7th Street SW connecting to the bike lane on 2nd Avenue SW north of 7th Street
- 1st Street SW from 6th Avenue SW west toward TH 52
- Along 2nd Street NW from 6th Avenue NW west through the Kutzky Park neighborhood to 10th Avenue NW
- 1st Avenue NW from Civic Center Drive connecting to Center Street
- 4th Avenue SE between 6th Street SE and 4th Street SE
- 6th Street SE from 3rd Avenue SE to 13th Avenue SE

Bike Lanes

Bike lanes are specifically designated space for bicyclists to travel on a street. Bike lanes are designed to improve visibility and safety for cyclists where traffic volumes and speeds are higher. Bike lanes are generally delineated by a solid white line and are between 6 and 8 feet wide. Priority investments for future bike lanes in downtown are recommended on the following streets:

- 4th Street SE and SW through downtown, perhaps extending as far west as 10th Avenue SW and as far east as 19th Avenue SE
- The entire length of 6th Avenue NW/SW from 8th Street NW to 11th Street SW
- 2nd Avenue SW between 2nd Street and 7th Street SW and Soldier's Field Drive to bike paths
- A future 6th Street SE connection between Broadway and 3rd Avenue SE
- A future crossing at 6th Avenue between Broadway and 3rd Avenue SE
- Possible two-way cycle track between River and Broadway on 3rd Street

BICYCLE BOULEVARD TREATMENTS ALLOW THROUGH BIKE MOVEMENTS WHILE RESTRICTING VEHICLES FROM TRAVELING THROUGH THE INTERSECTION. A SIMILAR TREATMENT IS RECOMMENDED AT LOCATION A ON THE MAP ON PAGE 110

COLORED BIKE BOX RESTRICTS RIGHT TURNS ON RED AND PROVIDES A SAFE REFUGE FOR CYCLISTS. RECOMMENDED BIKE BOX LOCATIONS ARE SYMBOLIZED AS B ON PAGE 110

PROTECTED BIKE OASIS PROVIDES ACCESSIBLE BIKE PARKING

BIKE HUB AT PORTLAND STATE UNIVERSITY. RECOMMENDED LOCATIONS FOR A BIKE HUB IS SYMBOLIZED AS C AND F ON THE MAP ON PAGE 110

ON-STREET BIKE CORRAL PROVIDES BIKE PARKING CLOSE TO ACTIVITY CENTERS WHILE MAINTAINING VALUABLE SIDEWALK

Bicycle Amenities

Amenities at Downtown Destinations

Safe, secure, comfortable, and accessible bike parking is a vital component of a bicycle network, as are other supportive facilities and programs that make cycling more attractive. While a number of parking ramps and lots in downtown already accommodate some bike parking, it is recommended that the location of bike parking be more prominent and convenient to key downtown destinations. Specific recommendations include:

- Covered "bike oases" with parking for as many as 10-14 bikes are recommended in the vicinity of the Gonda Building, Peace Plaza, University Plaza and on 1st Avenue SW south of 2nd Street.
- The City and Mayo Clinic should explore a partnership to develop a "bike hub" in the vicinity of 2nd Street SW and 2nd Avenue SW (Lot 19). The Mayo Clinic already provides some bicycle parking in this location, which provides very direct access to the Mayo Clinic, the subway/skyway system and other uses downtown. A bike hub could provide for indoor and/or covered bike parking, bicycle repair, cycling information and bike rental.
- Covered bicycle parking in the Center Street Ramp (between Broadway and 1st Avenue)
- Expanded and covered bike parking in front of the Rochester Public Library
- Covered bike parking at the Rochester Government Center

Supportive Programs

Other supporting programs can help to provide incentives and generate excitement for biking for work and non-work trips. It is recommended that the City, in partnership with the Bicycle Pedestrian Advisory Committee (BPAC), the Mayo Clinic and the Rochester Downtown Alliance, encourage or incentivize biking for all trip types. A recommended strategy is for the City to provide support and resources to downtown employers to offer the $20/month fringe benefit for cyclists who regularly commute by bike (through the Federal Bicycle Commuter Act). Another strategy would be to organize more bicycle-oriented events as a strategy to promote bicycling and increase awareness for commuting options. A successful Bike to Work event is found in the Twin Cities as well as many other cities across the country. These programs are primarily focused on promoting cycling for work purposes, but they also encourage and educate users for many different types of trips. The City should also tap the creativity and resources of the Rochester Active Sports Club to help promote cycling for all users.